

SEQUENCE LISTING

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Miller, Charles
Catalan, John Avram
Monath, Thomas P.

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<130> 06132/075002

<140> US 10/715,868
<141> 2003-11-17

<150> US 60/426,592
<151> 2002-11-15

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<170> PatentIn version 3.3

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ctg agg aaa aaa cag atc act gta ctg gat ctc cat ccc ggc gcc	5205
Leu Arg Lys Lys Gln Ile Thr Val Leu Asp Leu His Pro Gly Ala	
1690 1695 1700	
ggt aaa aca agg agg att ctg cca cag atc atc aaa gag gcc ata	5250
Gly Lys Thr Arg Arg Ile Leu Pro Gln Ile Ile Lys Glu Ala Ile	
1705 1710 1715	
aac aga aga ctg aga aca gcc gtg cta gca cca acc agg gtt gtg	5295
Asn Arg Arg Leu Arg Thr Ala Val Leu Ala Pro Thr Arg Val Val	
1720 1725 1730	
gct gct gag atg gct gaa gca ctg aga gga ctg ccc atc cgg tac	5340
Ala Ala Glu Met Ala Glu Ala Leu Arg Gly Leu Pro Ile Arg Tyr	
1735 1740 1745	

cag aca	tcc gca	gtg ccc	aga gaa	cat aat	gga aat	gag att	gtt	5385
Gln Thr	Ser Ala	Val Pro	Arg	Glu His	Asn Gly	Asn Glu	Ile Val	
1750		1755			1760			
gat gtc	atg tgt	cat gct	acc ctc	acc cac	agg ctg	atg tct	cct	5430
Asp Val	Met Cys	His Ala	Thr	Leu Thr	His Arg	Leu Met	Ser Pro	
1765		1770			1775			
cac agg	gtg ccg	aac tac	aac ctg	ttc gtg	atg gat	gag gct	cat	5475
His Arg	Val Pro	Asn Tyr	Asn	Leu Phe	Val Met	Asp Glu	Ala His	
1780		1785			1790			
ttc acc	gac cca	gct agc	att gca	gca aga	ggt tac	att tcc	aca	5520
Phe Thr	Asp Pro	Ala Ser	Ile	Ala Ala	Arg Gly	Tyr Ile	Ser Thr	
1795		1800			1805			
aag gtc	gag cta	ggg gag	gcg gcg	gca ata	ttc atg	aca gcc	acc	5565
Lys Val	Glu Leu	Gly Glu	Ala Ala	Ala Ala	Ile Phe	Met Thr	Ala Thr	
1810		1815			1820			
cca cca	ggc act	tca gat	cca ttc	cca gag	tcc aat	tca cca	att	5610
Pro Pro	Gly Thr	Ser Asp	Pro	Phe Pro	Glu Ser	Asn Ser	Pro Ile	
1825		1830			1835			
tcc gac	tta cag	act gag	atc ccg	gat cga	gct tgg	aac tct	gga	5655
Ser Asp	Leu Gln	Thr Glu	Ile	Pro Asp	Arg Ala	Trp Asn	Ser Gly	
1840		1845			1850			
tac gaa	tgg atc	aca gaa	tac acc	ggg aag	acg gtt	tgg ttt	gtg	5700
Tyr Glu	Trp Ile	Thr Glu	Tyr	Thr Gly	Lys Thr	Val Trp	Phe Val	
1855		1860			1865			
cct agt	gtc aag	atg ggg	aat gag	att gcc	ctt tgc	cta caa	cgt	5745
Pro Ser	Val Lys	Met Gly	Asn	Glu Ile	Ala Leu	Cys Leu	Gln Arg	
1870		1875			1880			
gct gga	aag aaa	gta gtc	caa ttg	aac aga	aag tcg	tac gag	acg	5790
Ala Gly	Lys Lys	Val Val	Gln	Leu Asn	Arg Lys	Ser Tyr	Glu Thr	
1885		1890			1895			
gag tac	cca aaa	tgt aag	aac gat	gat tgg	gac ttt	gtt atc	aca	5835
Glu Tyr	Pro Lys	Cys Lys	Asn	Asp Asp	Trp Asp	Phe Val	Ile Thr	
1900		1905			1910			
aca gac	ata tct	gaa atg	ggg gct	aac ttc	aag gcg	agc agg	gtg	5880
Thr Asp	Ile Ser	Glu Met	Gly	Ala Asn	Phe Lys	Ala Ser	Arg Val	
1915		1920			1925			
att gac	agc cgg	aag agt	gtg aaa	cca acc	atc ata	aca gaa	gga	5925
Ile Asp	Ser Arg	Lys Ser	Val	Lys Pro	Thr Ile	Ile Thr	Glu Gly	
1930		1935			1940			
gaa ggg	aga gtg	atc ctg	gga gaa	cca tct	gca gtg	aca gca	gct	5970
Glu Gly	Arg Val	Ile Leu	Gly	Glu Pro	Ser Ala	Val Thr	Ala Ala	
1945		1950			1955			
agt gcc	gcc cag	aga cgt	gga cgt	atc ggt	aga aat	ccg tcg	caa	6015

Ser	Ala	Ala	Gln	Arg	Arg	Gly	Arg	Ile	Gly	Arg	Asn	Pro	Ser	Gln	
1960				1965				1970							
gtt	ggt	gat	gag	tac	tgt	tat	ggg	ggg	cac	acg	aat	gaa	gac	gac	6060
Val	Gly	Asp	Glu	Tyr	Cys	Tyr	Gly	Gly	His	Thr	Asn	Glu	Asp	Asp	
1975					1980				1985						
tcg	aac	ttc	gcc	cat	tgg	act	gag	gca	cga	atc	atg	ctg	gac	aac	6105
Ser	Asn	Phe	Ala	His	Trp	Thr	Glu	Ala	Arg	Ile	Met	Leu	Asp	Asn	
1990					1995				2000						
atc	aac	atg	cca	aac	gga	ctg	atc	gct	caa	ttc	tac	caa	cca	gag	6150
Ile	Asn	Met	Pro	Asn	Gly	Leu	Ile	Ala	Gln	Phe	Tyr	Gln	Pro	Glu	
2005					2010				2015						
cgt	gag	aag	gta	tat	acc	atg	gat	ggg	gaa	tac	cgg	ctc	aga	gga	6195
Arg	Glu	Lys	Val	Tyr	Thr	Met	Asp	Gly	Glu	Tyr	Arg	Leu	Arg	Gly	
2020					2025				2030						
gaa	gag	aga	aaa	aac	ttt	ctg	gaa	ctg	ttg	agg	act	gca	gat	ctg	6240
Glu	Glu	Arg	Lys	Asn	Phe	Leu	Glu	Leu	Leu	Arg	Thr	Ala	Asp	Leu	
2035					2040				2045						
cca	gtt	tgg	ctg	gct	tac	aag	gtt	gca	gcg	gct	gga	gtg	tca	tac	6285
Pro	Val	Trp	Leu	Ala	Tyr	Lys	Val	Ala	Ala	Ala	Gly	Val	Ser	Tyr	
2050					2055				2060						
cac	gac	cgg	agg	tgg	tgc	ttt	gat	ggt	cct	agg	aca	aac	aca	att	6330
His	Asp	Arg	Arg	Trp	Cys	Phe	Asp	Gly	Pro	Arg	Thr	Asn	Thr	Ile	
2065					2070				2075						
tta	gaa	gac	aac	aac	gaa	gtg	gaa	gtc	atc	acg	aag	ctt	ggt	gaa	6375
Leu	Glu	Asp	Asn	Asn	Glu	Val	Glu	Val	Ile	Thr	Lys	Leu	Gly	Glu	
2080					2085				2090						
agg	aag	att	ctg	agg	ccg	cgc	tgg	att	gac	gcc	agg	gtg	tac	tcg	6420
Arg	Lys	Ile	Leu	Arg	Pro	Arg	Trp	Ile	Asp	Ala	Arg	Val	Tyr	Ser	
2095					2100				2105						
gat	cac	cag	gca	cta	aag	gcg	ttc	aag	gac	ttc	gcc	tcg	gga	aaa	6465
Asp	His	Gln	Ala	Leu	Lys	Ala	Phe	Lys	Asp	Phe	Ala	Ser	Gly	Lys	
2110					2115				2120						
cgt	tct	cag	ata	ggg	ctc	att	gag	gtt	ctg	gga	aag	atg	cct	gag	6510
Arg	Ser	Gln	Ile	Gly	Leu	Ile	Glu	Val	Leu	Gly	Lys	Met	Pro	Glu	
2125					2130				2135						
cac	ttc	atg	ggg	aag	aca	tgg	gaa	gca	ctt	gac	acc	atg	tac	gtt	6555
His	Phe	Met	Gly	Lys	Thr	Trp	Glu	Ala	Leu	Asp	Thr	Met	Tyr	Val	
2140					2145				2150						
gtg	gcc	act	gca	gag	aaa	gga	gga	aga	gct	cac	aga	atg	gcc	ctg	6600
Val	Ala	Thr	Ala	Glu	Lys	Gly	Gly	Arg	Ala	His	Arg	Met	Ala	Leu	
2155					2160				2165						
gag	gaa	ctg	cca	gat	gct	ctt	cag	aca	att	gcc	ttg	att	gcc	tta	6645
Glu	Glu	Leu	Pro	Asp	Ala	Leu	Gln	Thr	Ile	Ala	Leu	Ile	Ala	Leu	

2170	2175	2180	
ttg agt	gtg atg acc atg gga	gta ttc ttc ctc ctc	atg cag cgg
Leu Ser	Val Met Thr Met Gly	Val Phe Phe Leu Leu	Met Gln Arg
2185	2190	2195	
aag ggc	att gga aag ata ggt	ttg gga ggc gct gtc	ttg gga gtc
Lys Gly	Ile Gly Lys Ile Gly	Leu Gly Ala Val	Leu Gly Val
2200	2205	2210	
gcg acc	ttt ttc tgt tgg atg	gct gaa gtt cca gga	acg aag atc
Ala Thr	Phe Phe Cys Trp Met	Ala Glu Val Pro Gly	Thr Lys Ile
2215	2220	2225	
gcc gga	atg ttg ctg ctc tcc	ctt ctc ttg atg att	gtg cta att
Ala Gly	Met Leu Leu Leu Ser	Leu Leu Leu Met Ile	Val Leu Ile
2230	2235	2240	
cct gag	cca gag aag caa cgt	tcg cag aca gac aac	cag cta gcc
Pro Glu	Pro Glu Lys Gln Arg	Ser Gln Thr Asp Asn	Gln Leu Ala
2245	2250	2255	
gtg ttc	ctg att tgt gtc atg	acc ctt gtg agc gca	gtg gca gcc
Val Phe	Leu Ile Cys Val Met	Thr Leu Val Ser Ala	Val Ala Ala
2260	2265	2270	
aac gag	atg ggt tgg cta gat	aag acc aag agt gac	ata agc agt
Asn Glu	Met Gly Trp Leu Asp	Lys Thr Lys Ser Asp	Ile Ser Ser
2275	2280	2285	
ttg ttt	ggg caa aga att gag	gtc aag gag aat ttc	agc atg gga
Leu Phe	Gly Gln Arg Ile Glu	Val Lys Glu Asn Phe	Ser Met Gly
2290	2295	2300	
gag ttt	ctt ttg gac ttg agg	ccg gca aca gcc tgg	tca ctg tac
Glu Phe	Leu Leu Asp Leu Arg	Pro Ala Thr Ala Trp	Ser Leu Tyr
2305	2310	2315	
gct gtg	aca aca gcg gtc ctc	act cca ctg cta aag	cat ttg atc
Ala Val	Thr Thr Ala Val Leu	Thr Pro Leu Leu Lys	His Leu Ile
2320	2325	2330	
acg tca	gat tac atc aac acc	tca ttg acc tca ata	aac gtt cag
Thr Ser	Asp Tyr Ile Asn Thr	Ser Leu Thr Ser Ile	Asn Val Gln
2335	2340	2345	
gca agt	gca cta ttc aca ctc	gcg cga ggc ttc ccc	ttc gtc gat
Ala Ser	Ala Leu Phe Thr Leu	Ala Arg Gly Phe Pro	Phe Val Asp
2350	2355	2360	
gtt gga	gtg tcg gct ctc ctg	cta gca gcc gga tgc	tgg gga caa
Val Gly	Val Ser Ala Leu Leu	Leu Ala Ala Gly Cys	Trp Gly Gln
2365	2370	2375	
gtc acc	ctc acc gtt acg gta	aca gcg gca aca ctc	ctt ttt tgc
Val Thr	Leu Thr Val Thr Val	Thr Ala Ala Thr Leu	Leu Phe Cys
2380	2385	2390	

cac tat	gcc tac atg gtt ccc	ggt tgg caa gct gag	gca atg cgc	7320
His Tyr	Ala Tyr Met Val Pro	Gly Trp Gln Ala Glu	Ala Met Arg	
2395	2400	2405		
tca gcc	cag cg ^g cg ^g aca g ^c g	g ^c cc g ^g ga atc atg aag	aac g ^c t g ^t a	7365
Ser Ala	Gln Arg Arg Thr Ala	Ala Gly Ile Met Lys	Asn Ala Val	
2410	2415	2420		
gtg gat	ggc atc gtg g ^c cc ac ^g	g ^a c g ^t c c ^c ca g ^a a t ^t a	g ^a g c ^c g acc	7410
Val Asp	Gly Ile Val Ala Thr	Asp Val Pro Glu Leu	Glu Arg Thr	
2425	2430	2435		
aca ccc	atc atg cag aag aaa	g ^t t g ^g ga c ^a g atc atg	ct ^g atc tt ^g	7455
Thr Pro	Ile Met Gln Lys Lys	Val Gly Gln Ile Met	Leu Ile Leu	
2440	2445	2450		
gtg tct	cta g ^c t g ^c a g ^t a g ^t a	gtg a ^a c cc ^g t ^c t gt ^t g	a ^a g a ^c a g ^t a	7500
Val Ser	Leu Ala Ala Val Val	Val Asn Pro Ser Val	Lys Thr Val	
2455	2460	2465		
cga gaa	g ^c cc g ^g ga att tt ^g atc	ac ^g g ^c cc g ^c a g ^c g gt ^t g	ac ^g c ^t t t ^g g	7545
Arg Glu	Ala Gly Ile Leu Ile	Thr Ala Ala Ala Val	Thr Leu Trp	
2470	2475	2480		
gag aat	g ^g ga g ^c a agc t ^c t g ^t t	t ^t g a ^a c g ^c a a ^c a a ^c t	g ^c cc atc g ^g ga	7590
Glu Asn	Gly Ala Ser Ser Val	Trp Asn Ala Thr Thr	Ala Ile Gly	
2485	2490	2495		
ctc tgc	cac atc atg cgt g ^g gg	g ^g t t ^t g t ^t g t ^c a t ^t g	ct ^a t ^c c at ^a	7635
Leu Cys	His Ile Met Arg Gly	Gly Trp Leu Ser Cys	Leu Ser Ile	
2500	2505	2510		
aca tgg	aca ctc ata aag aac	at ^g g ^a a a ^a a c ^c ca g ^g ga	ct ^a a ^a a a ^a ga	7680
Thr Trp	Thr Leu Ile Lys Asn	Met Glu Lys Pro Gly	Leu Lys Arg	
2515	2520	2525		
ggt g ^g gg	g ^c a a ^a a g ^g ga c ^c g acc	t ^t g g ^g ga g ^a g g ^t t t ^t g	a ^a a g ^a a a ^a ga	7725
Gly Gly	Ala Lys Gly Arg Thr	Leu Gly Glu Val Trp	Lys Glu Arg	
2530	2535	2540		
ctc aac	cag atg aca a ^a a g ^a a	g ^a g t ^t c act agg tac	c ^c g a ^a a g ^a g	7770
Leu Asn	Gln Met Thr Lys Glu	Glu Phe Thr Arg Tyr	Arg Lys Glu	
2545	2550	2555		
gcc atc	atc gaa gtc gat c ^c g	t ^c a g ^c g g ^c a a ^a a c ^a c	g ^c cc agg a ^a a	7815
Ala Ile	Ile Glu Val Asp Arg	Ser Ala Ala Lys His	Ala Arg Lys	
2560	2565	2570		
gaa g ^g gc	aat gtc act g ^g ga g ^g gg	cat c ^c ca g ^t c t ^c t agg	g ^g gc a ^c a g ^c a	7860
Glu Gly	Asn Val Thr Gly Gly	His Pro Val Ser Arg	Gly Thr Ala	
2575	2580	2585		
aaa ctg	aga tgg ctg gtc g ^a a	c ^g g agg t ^t t c ^t c g ^a a	c ^c g g ^t c g ^g ga	7905
Lys Leu	Arg Trp Leu Val Glu	Arg Arg Phe Leu Glu	Pro Val Gly	
2590	2595	2600		

aaa gtg	att gac ctt gga tgt	gga aga ggc ggt tgg	tgt tac tat	7950
Lys Val	Ile Asp Leu Gly Cys	Gly Arg Gly Gly Trp	Cys Tyr Tyr	
2605	2610	2615		
atg gca	acc caa aaa aga gtc	caa gaa gtc aga ggg	tac aca aag	7995
Met Ala	Thr Gln Lys Arg Val	Gln Glu Val Arg Gly	Tyr Thr Lys	
2620	2625	2630		
ggc ggt	ccc gga cat gaa gag	ccc caa cta gtg caa	agt tat gga	8040
Gly Gly	Pro Gly His Glu Glu	Pro Gln Leu Val Gln	Ser Tyr Gly	
2635	2640	2645		
tgg aac	att gtc acc atg aag	agt gga gtg gat gtg	ttc tac aga	8085
Trp Asn	Ile Val Thr Met Lys	Ser Gly Val Asp Val	Phe Tyr Arg	
2650	2655	2660		
cct tct	gag tgt tgt gac acc	ctc ctt tgt gac atc	gga gag tcc	8130
Pro Ser	Glu Cys Cys Asp Thr	Leu Leu Cys Asp Ile	Gly Glu Ser	
2665	2670	2675		
tcg tca	agt gct gag gtt gaa	gag cat agg acg att	cgg gtc ctt	8175
Ser Ser	Ser Ala Glu Val Glu	Glu His Arg Thr Ile	Arg Val Leu	
2680	2685	2690		
gaa atg	gtt gag gac tgg ctg	cac cga ggg cca agg	gaa ttt tgc	8220
Glu Met	Val Glu Asp Trp Leu	His Arg Gly Pro Arg	Glu Phe Cys	
2695	2700	2705		
gtg aag	gtg ctc tgc ccc tac	atg ccg aaa gtc ata	gag aag atg	8265
Val Lys	Val Leu Cys Pro Tyr	Met Pro Lys Val Ile	Glu Lys Met	
2710	2715	2720		
gag ctg	ctc caa cgc cgg tat	ggg ggg gga ctg gtc	aga aac cca	8310
Glu Leu	Leu Gln Arg Arg Tyr	Gly Gly Leu Val	Arg Asn Pro	
2725	2730	2735		
ctc tca	cgg aat tcc acg cac	gag atg tat tgg gtg	agt cga gct	8355
Leu Ser	Arg Asn Ser Thr His	Glu Met Tyr Trp Val	Ser Arg Ala	
2740	2745	2750		
tca ggc	aat gtg gta cat tca	gtg aat atg acc agc	cag gtg ctc	8400
Ser Gly	Asn Val Val His Ser	Val Asn Met Thr Ser	Gln Val Leu	
2755	2760	2765		
cta gga	aga atg gaa aaa agg	acc tgg aag gga ccc	caa tac gag	8445
Leu Gly	Arg Met Glu Lys Arg	Thr Trp Lys Gly Pro	Gln Tyr Glu	
2770	2775	2780		
gaa gat	gta aac ttg gga agt	gga acc agg gcg gtg	gga aaa ccc	8490
Glu Asp	Val Asn Leu Gly Ser	Gly Thr Arg Ala Val	Gly Lys Pro	
2785	2790	2795		
ctg ctc	aac tca gac acc agt	aaa atc aag aac agg	att gaa cga	8535
Leu Leu	Asn Ser Asp Thr Ser	Lys Ile Lys Asn Arg	Ile Glu Arg	
2800	2805	2810		
ctc agg	cgt gag tac agt tcg	acg tgg cac cac gat	gag aac cac	8580

Leu	Arg	Arg	Glu	Tyr	Ser	Ser	Thr	Trp	His	His	Asp	Glu	Asn	His	
2815							2820				2825				
cca	tat	aga	acc	tgg	aac	tat	cac	ggc	agt	tat	gat	gtg	aag	ccc	8625
Pro	Tyr	Arg	Thr	Trp	Asn	Tyr	His	Gly	Ser	Tyr	Asp	Val	Lys	Pro	
2830							2835				2840				
aca	ggc	tcc	gcc	agt	tcg	ctg	gtc	aat	gga	gtg	gtc	agg	ctc	ctc	8670
Thr	Gly	Ser	Ala	Ser	Ser	Leu	Val	Asn	Gly	Val	Val	Arg	Leu	Leu	
2845							2850				2855				
tca	aaa	cca	tgg	gac	acc	atc	acg	aat	gtt	acc	acc	atg	gcc	atg	8715
Ser	Lys	Pro	Trp	Asp	Thr	Ile	Thr	Asn	Val	Thr	Thr	Met	Ala	Met	
2860							2865				2870				
act	gac	act	act	ccc	ttc	ggg	cag	cag	cga	gtg	ttc	aaa	gag	aag	8760
Thr	Asp	Thr	Thr	Pro	Phe	Gly	Gln	Gln	Arg	Val	Phe	Lys	Glu	Lys	
2875							2880				2885				
gtg	gac	acg	aaa	gct	cct	gaa	ccg	cca	gaa	gga	gtg	aag	tac	gtg	8805
Val	Asp	Thr	Lys	Ala	Pro	Glu	Pro	Pro	Glu	Gly	Val	Lys	Tyr	Val	
2890							2895				2900				
ctc	aat	gag	acc	acc	aac	tgg	ttg	tgg	gcg	ttt	ttg	gcc	aga	gaa	8850
Leu	Asn	Glu	Thr	Thr	Asn	Trp	Leu	Trp	Ala	Phe	Leu	Ala	Arg	Glu	
2905							2910				2915				
aaa	cgt	ccc	aga	atg	tgc	tct	cga	gag	gaa	ttc	ata	aga	aag	gtc	8895
Lys	Arg	Pro	Arg	Met	Cys	Ser	Arg	Glu	Glu	Phe	Ile	Arg	Lys	Val	
2920							2925				2930				
aac	agc	aat	gca	gct	ttg	ggt	gcc	atg	ttt	gaa	gag	cag	aat	caa	8940
Asn	Ser	Asn	Ala	Ala	Leu	Gly	Ala	Met	Phe	Glu	Glu	Gln	Asn	Gln	
2935							2940				2945				
tgg	agg	agc	gcc	aga	gaa	gca	gtt	gaa	gat	cca	aaa	ttt	tgg	gag	8985
Trp	Arg	Ser	Ala	Arg	Glu	Ala	Val	Glu	Asp	Pro	Lys	Phe	Trp	Glu	
2950							2955				2960				
atg	gtg	gat	gag	gag	cgc	gag	gca	cat	ctg	cg	ggg	gaa	tgt	cac	9030
Met	Val	Asp	Glu	Glu	Arg	Glu	Ala	His	Leu	Arg	Gly	Glu	Cys	His	
2965							2970				2975				
act	tgc	att	tac	aac	atg	atg	gga	aag	aga	gag	aaa	aaa	ccc	gga	9075
Thr	Cys	Ile	Tyr	Asn	Met	Met	Gly	Lys	Arg	Glu	Lys	Lys	Pro	Gly	
2980							2985				2990				
gag	ttc	gga	aag	gcc	aag	gga	agc	aga	gcc	att	tgg	ttc	atg	tgg	9120
Glu	Phe	Gly	Lys	Ala	Lys	Gly	Ser	Arg	Ala	Ile	Trp	Phe	Met	Trp	
2995							3000				3005				
ctc	gga	gct	cgc	ttt	ctg	gag	ttc	gag	gct	ctg	ggt	ttt	ctc	aat	9165
Leu	Gly	Ala	Arg	Phe	Leu	Glu	Phe	Glu	Ala	Leu	Gly	Phe	Leu	Asn	
3010							3015				3020				
gaa	gac	cac	tgg	ctt	gga	aga	aag	aac	tca	gga	gga	ggt	gtc	gag	9210
Glu	Asp	His	Trp	Leu	Gly	Arg	Lys	Asn	Ser	Gly	Gly	Gly	Val	Glu	

3025	3030	3035	
ggc ttg ggc ctc caa aaa ctg	ggt tac atc ctg cgt	gaa gtt ggc	9255
Gly Leu Gly Leu Gln Lys Leu	Gly Tyr Ile Leu Arg	Glu Val Gly	
3040	3045	3050	
acc cgg cct ggg ggc aag atc	tat gct gat gac aca	gct ggc tgg	9300
Thr Arg Pro Gly Gly Lys Ile	Tyr Ala Asp Asp	Thr Ala Gly Trp	
3055	3060	3065	
gac acc cgc atc acg aga gct	gac ttg gaa aat gaa	gct aag gtg	9345
Asp Thr Arg Ile Thr Arg Ala	Asp Leu Glu Asn Glu	Ala Lys Val	
3070	3075	3080	
ctt gag ctg ctt gat ggg gaa	cat cgg cgt ctt gcc	agg gcc atc	9390
Leu Glu Leu Leu Asp Gly Glu	His Arg Arg Leu Ala	Arg Ala Ile	
3085	3090	3095	
att gag ctc acc tat cgt cac	aaa gtt gtg aaa gtg	atg cgc ccg	9435
Ile Glu Leu Thr Tyr Arg His	Lys Val Val Lys Val	Met Arg Pro	
3100	3105	3110	
gct gct gat gga aga acc gtc	atg gat gtt atc tcc	aga gaa gat	9480
Ala Ala Asp Gly Arg Thr Val	Met Asp Val Ile Ser	Arg Glu Asp	
3115	3120	3125	
cag agg ggg agt gga caa gtt	gtc acc tac gcc cta	aac act ttc	9525
Gln Arg Gly Ser Gly Gln Val	Val Thr Tyr Ala Leu	Asn Thr Phe	
3130	3135	3140	
acc aac ctg gcc gtc cag ctg	gtg agg atg atg gaa	ggg gaa gga	9570
Thr Asn Leu Ala Val Gln Leu	Val Arg Met Met Glu	Gly Glu Gly	
3145	3150	3155	
gtg att ggc cca gat gat gtg	gag aaa ctc aca aaa	ggg aaa gga	9615
Val Ile Gly Pro Asp Asp Val	Glu Lys Leu Thr Lys	Gly Lys Gly	
3160	3165	3170	
ccc aaa gtc agg acc tgg ctg	ttt gag aat ggg gaa	gaa aga ctc	9660
Pro Lys Val Arg Thr Trp Leu	Phe Glu Asn Gly Glu	Glu Arg Leu	
3175	3180	3185	
agc cgc atg gct gtc agt gga	gat gac tgt gtg gta	aag ccc ctg	9705
Ser Arg Met Ala Val Ser Gly	Asp Asp Cys Val Val	Lys Pro Leu	
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Asp Asp Arg Phe Ala Thr Ser	Leu His Phe Leu Asn	Ala Met Ser	
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Lys Val Arg Lys Asp Ile Gln	Glu Trp Lys Pro Ser	Thr Gly Trp	
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Tyr Asp Trp Gln Gln Val Pro	Phe Cys Ser Asn His	Phe Thr Glu	
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Leu Ile Met Lys Asp Gly Arg Thr Leu Val Val Pro Cys Arg Gly	
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Gln Asp Glu Leu Val Gly Arg Ala Arg Ile Ser Pro Gly Ala Gly	
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Val Pro Tyr Ser Gly Lys Arg Glu Asp Ile Trp Cys Gly Ser Leu	
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Asp Tyr Met Ser Ser Leu Lys Arg Tyr Glu Asp Thr Thr Leu Val	
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Glu Asp Thr Val Leu	
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acaacaaacgc atattgacac ctggataga ctaggagatc ttctgctctg cacaaccagc 10975
cacacggcac agtgcgccga caatggtggc tggtggtgcg agaacacagg atct 11029

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<211> 3433
<212> PRT
<213> West Nile Virus

<400> 9

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Leu Lys Arg Gly Met Pro Arg Val Leu Ser Leu Ile Gly Leu Lys Arg
20 25 30

Ala Met Leu Ser Leu Ile Asp Gly Lys Gly Pro Ile Arg Phe Val Leu
35 40 45

Ala Leu Leu Ala Phe Phe Arg Phe Thr Ala Ile Ala Pro Thr Arg Ala
50 55 60

Val Leu Asp Arg Trp Arg Gly Val Asn Lys Gln Thr Ala Met Lys His
65 70 75 80

Leu Leu Ser Phe Lys Lys Glu Leu Gly Thr Leu Thr Ser Ala Ile Asn
85 90 95

Arg Arg Ser Ser Lys Gln Lys Lys Arg Gly Gly Lys Thr Gly Ile Ala
100 105 110

Val Met Ile Gly Leu Ile Ala Ser Val Gly Ala Val Thr Leu Ser Asn
115 120 125

Phe Gln Gly Lys Val Met Met Thr Val Asn Ala Thr Asp Val Thr Asp

130 135 140

Val Ile Thr Ile Pro Thr Ala Ala Gly Lys Asn Leu Cys Ile Val Arg
145 150 155 160

Ala Met Asp Val Gly Tyr Met Cys Asp Asp Thr Ile Thr Tyr Glu Cys
165 170 175

Pro Val Leu Ser Ala Gly Asn Asp Pro Glu Asp Ile Asp Cys Trp Cys
180 185 190

Thr Lys Ser Ala Val Tyr Val Arg Tyr Gly Arg Cys Thr Lys Thr Arg
195 200 205

His Ser Arg Arg Ser Arg Arg Ser Leu Thr Val Gln Thr His Gly Glu
210 215 220

Ser Thr Leu Ala Asn Lys Lys Gly Ala Trp Met Asp Ser Thr Lys Ala
225 230 235 240

Thr Arg Tyr Leu Val Lys Thr Glu Ser Trp Ile Leu Arg Asn Pro Gly
245 250 255

Tyr Ala Leu Val Ala Ala Val Ile Gly Trp Met Leu Gly Ser Asn Thr
260 265 270

Met Gln Arg Val Val Phe Val Val Leu Leu Leu Leu Val Ala Pro Ala
275 280 285

Tyr Ser Phe Asn Cys Leu Gly Met Ser Asn Arg Asp Phe Leu Glu Gly
290 295 300

Val Ser Gly Ala Thr Trp Val Asp Leu Val Leu Glu Gly Asp Ser Cys
305 310 315 320

Val Thr Ile Met Ser Lys Asp Lys Pro Thr Ile Asp Val Lys Met Met
325 330 335

Asn Met Glu Ala Ala Asn Leu Ala Glu Val Arg Ser Tyr Cys Tyr Leu
340 345 350

Ala Thr Val Ser Asp Leu Ser Thr Lys Ala Ala Cys Pro Thr Met Gly
355 360 365

Glu Ala His Asn Asp Lys Arg Ala Asp Pro Ala Phe Val Cys Arg Gln
370 375 380

Gly Val Val Asp Arg Gly Trp Gly Asn Gly Cys Gly Leu Phe Gly Lys
385 390 395 400

Gly Ser Ile Asp Thr Cys Ala Lys Phe Ala Cys Ser Thr Lys Ala Ile
405 410 415

Gly Arg Thr Ile Leu Lys Glu Asn Ile Lys Tyr Glu Val Ala Ile Phe
420 425 430

Val His Gly Pro Thr Thr Val Glu Ser His Gly Asn Tyr Ser Thr Gln
435 440 445

Val Gly Ala Thr Gln Ala Gly Arg Phe Ser Ile Thr Pro Ala Ala Pro
450 455 460

Ser Tyr Thr Leu Lys Leu Gly Glu Tyr Gly Glu Val Thr Val Asp Cys
465 470 475 480

Glu Pro Arg Ser Gly Ile Asp Thr Asn Ala Tyr Tyr Val Met Thr Val
485 490 495

Gly Thr Lys Thr Phe Leu Val His Arg Glu Trp Phe Met Asp Leu Asn
500 505 510

Leu Pro Trp Ser Ser Ala Gly Ser Thr Val Trp Arg Asn Arg Glu Thr
515 520 525

Leu Met Glu Phe Glu Glu Pro His Ala Thr Lys Gln Ser Val Ile Ala
530 535 540

Leu Gly Ser Gln Glu Gly Ala Leu His Gln Ala Leu Ala Gly Ala Ile
545 550 555 560

Pro Val Glu Phe Ser Ser Asn Thr Val Lys Leu Thr Ser Gly His Leu
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Lys Cys Arg Val Lys Met Glu Lys Leu Gln Leu Lys Gly Thr Thr Tyr
580 585 590

Gly Val Cys Ser Lys Ala Phe Lys Phe Leu Gly Thr Pro Ala Asp Thr
595 600 605

Gly His Gly Thr Val Val Leu Glu Leu Gln Tyr Thr Gly Thr Asp Gly
610 615 620

Pro Cys Lys Val Pro Ile Ser Ser Val Ala Ser Leu Asn Asp Leu Thr
625 630 635 640

Pro Val Gly Arg Leu Val Thr Val Asn Pro Phe Val Ser Val Ala Thr
645 650 655

Ala Asn Ala Lys Val Leu Ile Glu Leu Glu Pro Pro Phe Gly Asp Ser
660 665 670

Tyr Ile Val Val Gly Arg Gly Glu Gln Gln Ile Asn His His Trp His
675 680 685

Lys Ser Gly Ser Ser Ile Gly Lys Ala Phe Thr Thr Leu Lys Gly
690 695 700

Ala Gln Arg Leu Ala Ala Leu Gly Asp Thr Ala Trp Asp Phe Gly Ser
705 710 715 720

Val Gly Gly Val Phe Thr Ser Val Gly Lys Ala Val His Gln Val Phe
725 730 735

Gly Gly Ala Phe Arg Ser Leu Phe Gly Gly Met Ser Trp Ile Thr Gln
740 745 750

Gly Leu Leu Gly Ala Leu Leu Trp Met Gly Ile Asn Ala Arg Asp
755 760 765

Arg Ser Ile Ala Leu Thr Phe Leu Ala Val Gly Val Leu Leu Phe
770 775 780

Leu Ser Val Asn Val His Ala Asp Thr Gly Cys Ala Ile Asp Ile Ser
785 790 795 800

Arg Gln Glu Leu Arg Cys Gly Ser Gly Val Phe Ile His Asn Asp Val
805 810 815

Glu Ala Trp Met Asp Arg Tyr Lys Tyr Tyr Pro Glu Thr Pro Gln Gly
820 825 830

Leu Ala Lys Ile Ile Gln Lys Ala His Lys Glu Gly Val Cys Gly Leu
835 840 845

Arg Ser Val Ser Arg Leu Glu His Gln Met Trp Glu Ala Val Lys Asp
850 855 860

Glu Leu Asn Thr Leu Leu Lys Glu Asn Gly Val Asp Leu Ser Val Val
865 870 875 880

Val Glu Lys Gln Glu Gly Met Tyr Lys Ser Ala Pro Lys Arg Leu Thr
885 890 895

Ala Thr Thr Glu Lys Leu Glu Ile Gly Trp Lys Ala Trp Gly Lys Ser
900 905 910

Ile Leu Phe Ala Pro Glu Leu Ala Asn Asn Thr Phe Val Val Asp Gly
915 920 925

Pro Glu Thr Lys Glu Cys Pro Thr Gln Asn Arg Ala Trp Asn Ser Leu
930 935 940

Glu Val Glu Asp Phe Gly Phe Gly Leu Thr Ser Thr Arg Met Phe Leu
945 950 955 960

Lys Val Arg Glu Ser Asn Thr Thr Glu Cys Asp Ser Lys Ile Ile Gly
965 970 975

Thr Ala Val Lys Asn Asn Leu Ala Ile His Ser Asp Leu Ser Tyr Trp
980 985 990

Ile Glu Ser Arg Leu Asn Asp Thr Trp Lys Leu Glu Arg Ala Val Leu
995 1000 1005

Gly Glu Val Lys Ser Cys Thr Trp Pro Glu Thr His Thr Leu Trp
1010 1015 1020

Gly Asp Gly Ile Leu Glu Ser Asp Leu Ile Ile Pro Val Thr Leu
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Ala Gly Pro Arg Ser Asn His Asn Arg Arg Pro Gly Tyr Lys Thr

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Gln Asn Gln Gly Pro Trp Asp Glu Gly Arg Val Glu Ile Asp Phe
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Asp Tyr Cys Pro Gly Thr Thr Val Thr Leu Ser Glu Ser Cys Gly
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His Arg Gly Pro Ala Thr Arg Thr Thr Thr Glu Ser Gly Lys Leu
1085 1090 1095

Ile Thr Asp Trp Cys Cys Arg Ser Cys Thr Leu Pro Pro Leu Arg
1100 1105 1110

Tyr Gln Thr Asp Ser Gly Cys Trp Tyr Gly Met Glu Ile Arg Pro
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Gln Arg His Asp Glu Lys Thr Leu Val Gln Ser Gln Val Asn Ala
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Tyr Asn Ala Asp Met Ile Asp Pro Phe Gln Leu Gly Leu Leu Val
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Val Phe Leu Ala Thr Gln Glu Val Leu Arg Lys Arg Trp Thr Ala
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Phe Gly Gly Ile Thr Tyr Thr Asp Val Leu Arg Tyr Val Ile Leu
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Val Gly Ala Ala Phe Ala Glu Ser Asn Ser Gly Gly Asp Val Val
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His Leu Ala Leu Met Ala Thr Phe Lys Ile Gln Pro Val Phe Met
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Val Ala Ser Phe Leu Lys Ala Arg Trp Thr Asn Gln Glu Asn Ile
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Ala Arg Gln Ile Leu Leu Trp Glu Ile Pro Asp Val Leu Asn Ser
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Thr Ser Asn Val Val Val Pro Leu Leu Ala Leu Leu Thr Pro Gly
1295 1300 1305

Leu Arg Cys Leu Asn Leu Asp Val Tyr Arg Ile Leu Leu Leu Met
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Val Gly Ile Gly Ser Leu Ile Arg Glu Lys Arg Ser Ala Ala Ala
1325 1330 1335

Lys Lys Lys Gly Ala Ser Leu Leu Cys Leu Ala Leu Ala Ser Thr
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Gly Leu Phe Asn Pro Met Ile Leu Ala Ala Gly Leu Ile Ala Cys
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Asp Pro Asn Arg Lys Arg Gly Trp Pro Ala Thr Glu Val Met Thr
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Glu Arg Thr Ala Asp Ile Ser Trp Glu Ser Asp Ala Glu Ile Thr
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Gly Ser Ser Glu Arg Val Asp Val Arg Leu Asp Asp Asp Gly Asn
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Phe Gln Leu Met Asn Asp Pro Gly Ala Pro Trp Lys Ile Trp Met
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Leu Arg Met Val Cys Leu Ala Ile Ser Ala Tyr Thr Pro Trp Ala
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Ile Leu Pro Ser Val Val Gly Phe Trp Ile Thr Leu Gln Tyr Thr
1490 1495 1500

Lys Arg Gly Gly Val Leu Trp Asp Thr Pro Ser Pro Lys Glu Tyr
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Lys Lys Gly Asp Thr Thr Gly Val Tyr Arg Ile Met Thr Arg
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Gly Leu Leu Gly Ser Tyr Gln Ala Gly Ala Gly Val Met Val Glu
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Gly Val Phe His Thr Leu Trp His Thr Thr Lys Gly Ala Ala Leu
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Met Ser Gly Glu Gly Arg Leu Asp Pro Tyr Trp Gly Ser Val Lys
1565 1570 1575

Glu Asp Arg Leu Cys Tyr Gly Gly Pro Trp Lys Leu Gln His Lys
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Trp Asn Gly Gln Asp Glu Val Gln Met Ile Val Val Glu Pro Gly
1595 1600 1605

Lys Asn Val Lys Asn Val Gln Thr Lys Pro Gly Val Phe Lys Thr
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Pro Glu Gly Glu Ile Gly Ala Val Thr Leu Asp Phe Pro Thr Gly
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Thr Ser Gly Ser Pro Ile Val Asp Lys Asn Gly Asp Val Ile Gly
1640 1645 1650

Leu Tyr Gly Asn Gly Val Ile Met Pro Asn Gly Ser Tyr Ile Ser
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Ala Ile Val Gln Gly Glu Arg Met Asp Glu Pro Ile Pro Ala Gly
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Phe Glu Pro Glu Met Leu Arg Lys Lys Gln Ile Thr Val Leu Asp
1685 1690 1695

Leu His Pro Gly Ala Gly Lys Thr Arg Arg Ile Leu Pro Gln Ile
1700 1705 1710

Ile Lys Glu Ala Ile Asn Arg Arg Leu Arg Thr Ala Val Leu Ala
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Pro Thr Arg Val Val Ala Ala Glu Met Ala Glu Ala Leu Arg Gly
1730 1735 1740

Leu Pro Ile Arg Tyr Gln Thr Ser Ala Val Pro Arg Glu His Asn
1745 1750 1755

Gly Asn Glu Ile Val Asp Val Met Cys His Ala Thr Leu Thr His
1760 1765 1770

Arg Leu Met Ser Pro His Arg Val Pro Asn Tyr Asn Leu Phe Val
1775 1780 1785

Met Asp Glu Ala His Phe Thr Asp Pro Ala Ser Ile Ala Ala Arg
1790 1795 1800

Gly Tyr Ile Ser Thr Lys Val Glu Leu Gly Glu Ala Ala Ala Ile
1805 1810 1815

Phe Met Thr Ala Thr Pro Pro Gly Thr Ser Asp Pro Phe Pro Glu
1820 1825 1830

Ser Asn Ser Pro Ile Ser Asp Leu Gln Thr Glu Ile Pro Asp Arg
1835 1840 1845

Ala Trp Asn Ser Gly Tyr Glu Trp Ile Thr Glu Tyr Thr Gly Lys
1850 1855 1860

Thr Val Trp Phe Val Pro Ser Val Lys Met Gly Asn Glu Ile Ala
1865 1870 1875

Leu Cys Leu Gln Arg Ala Gly Lys Lys Val Val Gln Leu Asn Arg
1880 1885 1890

Lys Ser Tyr Glu Thr Glu Tyr Pro Lys Cys Lys Asn Asp Asp Trp

1895 1900 1905

Asp Phe Val Ile Thr Thr Asp Ile Ser Glu Met Gly Ala Asn Phe
1910 1915 1920

Lys Ala Ser Arg Val Ile Asp Ser Arg Lys Ser Val Lys Pro Thr
1925 1930 1935

Ile Ile Thr Glu Gly Glu Gly Arg Val Ile Leu Gly Glu Pro Ser
1940 1945 1950

Ala Val Thr Ala Ala Ser Ala Ala Gln Arg Arg Gly Arg Ile Gly
1955 1960 1965

Arg Asn Pro Ser Gln Val Gly Asp Glu Tyr Cys Tyr Gly Gly His
1970 1975 1980

Thr Asn Glu Asp Asp Ser Asn Phe Ala His Trp Thr Glu Ala Arg
1985 1990 1995

Ile Met Leu Asp Asn Ile Asn Met Pro Asn Gly Leu Ile Ala Gln
2000 2005 2010

Phe Tyr Gln Pro Glu Arg Glu Lys Val Tyr Thr Met Asp Gly Glu
2015 2020 2025

Tyr Arg Leu Arg Gly Glu Glu Arg Lys Asn Phe Leu Glu Leu Leu
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Ala Gly Val Ser Tyr His Asp Arg Arg Trp Cys Phe Asp Gly Pro
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Thr Lys Leu Gly Glu Arg Lys Ile Leu Arg Pro Arg Trp Ile Asp
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Ala Arg Val Tyr Ser Asp His Gln Ala Leu Lys Ala Phe Lys Asp
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His Arg Met Ala Leu Glu Glu Leu Pro Asp Ala Leu Gln Thr Ile
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Ala Leu Ile Ala Leu Leu Ser Val Met Thr Met Gly Val Phe Phe
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Leu Leu Met Gln Arg Lys Gly Ile Gly Lys Ile Gly Leu Gly Gly
2195 2200 2205

Ala Val Leu Gly Val Ala Thr Phe Phe Cys Trp Met Ala Glu Val
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Pro Gly Thr Lys Ile Ala Gly Met Leu Leu Leu Ser Leu Leu Leu
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Met Ile Val Leu Ile Pro Glu Pro Glu Lys Gln Arg Ser Gln Thr
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Ser Ala Val Ala Ala Asn Glu Met Gly Trp Leu Asp Lys Thr Lys
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Ser Asp Ile Ser Ser Leu Phe Gly Gln Arg Ile Glu Val Lys Glu
2285 2290 2295

Asn Phe Ser Met Gly Glu Phe Leu Leu Asp Leu Arg Pro Ala Thr
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Ala Trp Ser Leu Tyr Ala Val Thr Thr Ala Val Leu Thr Pro Leu
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Leu Lys His Leu Ile Thr Ser Asp Tyr Ile Asn Thr Ser Leu Thr
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Ser Ile Asn Val Gln Ala Ser Ala Leu Phe Thr Leu Ala Arg Gly
2345 2350 2355

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Met Lys Asn Ala Val Val Asp Gly Ile Val Ala Thr Asp Val Pro
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Glu Leu Glu Arg Thr Thr Pro Ile Met Gln Lys Lys Val Gly Gln
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Ile Met Leu Ile Leu Val Ser Leu Ala Ala Val Val Val Asn Pro
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Ser Val Lys Thr Val Arg Glu Ala Gly Ile Leu Ile Thr Ala Ala
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Thr Thr Ala Ile Gly Leu Cys His Ile Met Arg Gly Gly Trp Leu
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Ser Cys Leu Ser Ile Thr Trp Thr Leu Ile Lys Asn Met Glu Lys
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Arg Tyr Arg Lys Glu Ala Ile Ile Glu Val Asp Arg Ser Ala Ala
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Lys His Ala Arg Lys Glu Gly Asn Val Thr Gly Gly His Pro Val
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Arg Gly Tyr Thr Lys Gly Gly Pro Gly His Glu Glu Pro Gln Leu
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Val Gln Ser Tyr Gly Trp Asn Ile Val Thr Met Lys Ser Gly Val
2645 2650 2655

Asp Val Phe Tyr Arg Pro Ser Glu Cys Cys Asp Thr Leu Leu Cys
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Asp Ile Gly Glu Ser Ser Ser Ala Glu Val Glu Glu His Arg
2675 2680 2685

Thr Ile Arg Val Leu Glu Met Val Glu Asp Trp Leu His Arg Gly
2690 2695 2700

Pro Arg Glu Phe Cys Val Lys Val Leu Cys Pro Tyr Met Pro Lys
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Val Ile Glu Lys Met Glu Leu Leu Gln Arg Arg Tyr Gly Gly Gly
2720 2725 2730

Leu Val Arg Asn Pro Leu Ser Arg Asn Ser Thr His Glu Met Tyr
2735 2740 2745

Trp Val Ser Arg Ala Ser Gly Asn Val Val His Ser Val Asn Met

2750 2755 2760

Thr Ser Gln Val Leu Leu Gly Arg Met Glu Lys Arg Thr Trp Lys
2765 2770 2775

Gly Pro Gln Tyr Glu Glu Asp Val Asn Leu Gly Ser Gly Thr Arg
2780 2785 2790

Ala Val Gly Lys Pro Leu Leu Asn Ser Asp Thr Ser Lys Ile Lys
2795 2800 2805

Asn Arg Ile Glu Arg Leu Arg Arg Glu Tyr Ser Ser Thr Trp His
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His Asp Glu Asn His Pro Tyr Arg Thr Trp Asn Tyr His Gly Ser
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Arg Gly Glu Cys His Thr Cys Ile Tyr Asn Met Met Gly Lys Arg
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Glu Lys Lys Pro Gly Glu Phe Gly Lys Ala Lys Gly Ser Arg Ala
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Asp Thr Ala Gly Trp Asp Thr Arg Ile Thr Arg Ala Asp Leu Glu
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Leu Ala Arg Ala Ile Ile Glu Leu Thr Tyr Arg His Lys Val Val
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Lys Val Met Arg Pro Ala Ala Asp Gly Arg Thr Val Met Asp Val
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Ala Leu Asn Thr Phe Thr Asn Leu Ala Val Gln Leu Val Arg Met
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Met Glu Gly Glu Gly Val Ile Gly Pro Asp Asp Val Glu Lys Leu
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Thr Lys Gly Lys Gly Pro Lys Val Arg Thr Trp Leu Phe Glu Asn
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Gly Glu Glu Arg Leu Ser Arg Met Ala Val Ser Gly Asp Asp Cys
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Pro Ser Thr Gly Trp Tyr Asp Trp Gln Gln Val Pro Phe Cys Ser
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Asn His Phe Thr Glu Leu Ile Met Lys Asp Gly Arg Thr Leu Val
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Val Pro Cys Arg Gly Gln Asp Glu Leu Val Gly Arg Ala Arg Ile
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Ser Pro Gly Ala Gly Trp Asn Val Arg Asp Thr Ala Cys Leu Ala
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Lys Ser Tyr Ala Gln Met Trp Leu Leu Leu Tyr Phe His Arg Arg
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Asp Leu Arg Leu Met Ala Asn Ala Ile Cys Ser Ala Val Pro Val
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Gly Glu Trp Met Thr Thr Glu Asp Met Leu Glu Val Trp Asn Arg
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Glu Lys Trp Ser Asp Val Pro Tyr Ser Gly Lys Arg Glu Asp Ile
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Trp Cys Gly Ser Leu Ile Gly Thr Arg Ala Arg Ala Thr Trp Ala
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